

## ABSTRACT OF THE DISCLOSURE

A method of representing the effects on a received signal of a radio communications channel having  $L$  paths with a reduced computational effort is 5 achieved by transforming a representation of the channel into a simplified representation. Each path of the radio communications channel has an average attenuation and a pre-determined respective delay. The received signal includes a combination of correlated components determined from an effect of pulse shaping filters on the received signal, each component being correlated with respect to each of 10 the other components represented by a plurality of correlation coefficients. The method comprises generating a plurality of complex zero mean gaussian random variables each having a pre-determined variance, and summing the variables, to form a representation of the signal received via the radio communications channel. The pre-determined variance of each variable is calculated from the eigen values of a matrix 15 formed from the correlation coefficients and a channel correlation matrix which includes the average attenuation of each of the  $L$  paths. Accordingly a transformation of the  $L$ -path channel into a simplified representation is effected, without a requirement to represent the correlated components of the received signal. The correlated components may be, for example, the signal components produced by each 20 of a plurality of correlators of a rake receiver.